

Chapter 3

Summary of VPN Configuration Statements

The following sections explain the major routing-instances configuration statements that apply specifically to virtual private networks (VPNs) and virtual private LAN service (VPLS). The statements are organized alphabetically. Routing instances and the statements at the [edit routing-instances *routing-instance-name* routing-options] and [edit routing-instances *routing-instance-name* protocols] hierarchy levels are explained in the *JUNOS Internet Software Configuration Guide: Routing and Routing Protocols*.

description

Syntax	<code>description text;</code>
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Allows you to provide a text description for the routing instance. Enclose any descriptive text that includes spaces in quotation marks (" "). Text you include is displayed in the output of the show route instance detail command and has no effect on the operation of the routing instance.
Usage Guidelines	See "Configure the Description" on page 15.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

graceful-restart

Syntax	graceful-restart { disable; path-selection-defer-time-limit <i>time-limit</i> ; }
Hierarchy Level	[edit routing-options] [edit routing-instances <i>routing-instance-name</i> routing-options]
Description	Allows a router whose VPN control plane is undergoing a restart to continue to forward traffic while recovering its state from neighboring routers.
Options	disable—Disable graceful restart. <i>time-limit</i> —Grace period for graceful restart, in seconds. Range: 1 through 600
Usage Guidelines	See “Configure Graceful Restart” on page 27.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

instance-type

Syntax	instance-type <i>type</i> ;
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Defines the type of routing instance.
Options	<i>type</i> —Can be one of the following: l2vpn—Enable a Layer 2 VPN on the routing instance. You must configure the interface, route-distinguisher, vrf-import, and vrf-export statements for this type of routing instance. virtual-router—Enable a virtual-router routing instance. You must configure the interface statement for this type of routing instance. You do not need to configure the route-distinguisher, vrf-import, and vrf-export statements. vpls—Enable VPLS on the routing instance. You must configure the interface, route-distinguisher, vrf-import, and vrf-export statements for this type of routing instance. vrf—VPN routing and forwarding instance. Required to create a Layer 3 VPN. Creates a VPN routing and forwarding (VRF) table (<i>instance-name.inet.0</i>), which contains the routes originating from and destined for a particular Layer 3 VPN. You must configure the interface, route-distinguisher, vrf-import, and vrf-export statements for this type of routing instance.
Usage Guidelines	See “Configure the Instance Type” on page 16.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

interface

Syntax	interface <i>interface-name</i> ;
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Interface over which the VPN traffic travels between the provider edge (PE) router and customer edge (CE) router. You configure the interface on the PE router. If the instance type is vrf, the interface statement is required.
Usage Guidelines	See “Configure Interfaces for VPN Routing” on page 16.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

outbound-route-filtering

Syntax	<pre> outbound-route-filtering { extended-community { accept; no-accept; vrf-filter; } } </pre>
Hierarchy Level	[edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>], [edit routing-instances <i>routing-instance-name</i> protocols bgp group <i>group-name</i>], [edit routing-instances <i>routing-instance-name</i> protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Outbound route filtering allows you to filter BGP route advertisements for a particular BGP peer or set of peers. Peers in the same BGP group can have different routing table entries by filtering so that only a select peer or set of peers receives the route advertisements. For VPNs, this allows you to configure the PE routers to accept only a subset of the total number of VPN routes based on the configured VRF route targets.
Options	<p>accept—Accept a peer’s request for filtering on Network Layer Reachability Information (NLRI) route advertisements.</p> <p>no-accept—Deny a peer’s request for filtering on NLRI route advertisements.</p> <p>vrf-filter—Request filtering from peers.</p>
Usage Guidelines	See “Enable Outbound Route Filtering for VPNs” on page 24.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

route-distinguisher

Syntax	route-distinguisher (<i>ip-address:number</i> <i>as-number:number</i>);
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Identifier attached to a route that distinguishes to which VPN or VPLS routing instance it belongs. Each routing instance must have a unique distinguisher associated with it. Each route distinguisher is a 6-byte value.
Options	<p><i>as-number:number</i>—<i>as-number</i> is your assigned autonomous system (AS) number (a 2-byte value) and <i>number</i> is any 4-byte value. The AS number can be in the range of 1 through 65,535.</p> <p><i>ip-address:number</i>—<i>ip-address</i> is an IP address in your assigned prefix range (a 4-byte value) and <i>number</i> is any 2-byte value. The IP address can be any globally unique unicast address.</p>
Usage Guidelines	See “Configure the Route Distinguisher” on page 18.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

route-distinguisher-id

Syntax	route-distinguisher-id <i>ip-address</i> ;
Hierarchy Level	[edit routing-options]
Description	Automatically assigns a route distinguisher to the routing instance. If you configure the route-distinguisher statement in addition to the route-distinguisher-id statement, the value configured for route-distinguisher supersedes the value generated from route-distinguisher-id.
Usage Guidelines	See “Configure the Route Distinguisher” on page 18.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

vpn-apply-export

Syntax	vpn-apply-export;
Hierarchy Level	<p>[edit protocols bgp]</p> <p>[edit protocols bgp group <i>group-name</i>]</p> <p>[edit protocols bgp group <i>group-name</i> neighbor <i>neighbor</i>]</p>
Description	Applies both the VRF export and BGP group or neighbor export policies (VRF first, then BGP) before routes are advertised in the vrf or l2vpn routing tables to other PE routers.
Usage Guidelines	See “Apply Both the VRF Export and the BGP Export Policies” on page 23.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

vrf-export

Syntax	vrf-export [<i>policy-names</i>];
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	How routes are exported from the local PE router's VRF table (<i>routing-instance-name.inet.0</i>) to the remote PE router. If the instance type is vrf, the vrf-export statement is required.
Options	You can configure multiple export policies on the PE router.
Usage Guidelines	See "Configure Export Policy for the PE Router's VRF Table" on page 22.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-import

Syntax	vrf-import [<i>policy-names</i>];
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	How routes are imported into the local PE router's VRF table (<i>routing-instance-name.inet.0</i>) from the remote PE router. If the instance type is vrf, the vrf-import statement is required.
Options	You can configure multiple import policies on the PE router.
Usage Guidelines	See "Configure Import Policy for the PE Router's VRF Table" on page 21.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-target

Syntax	vrf-target { <i>community</i> ; import <i>community</i> ; export <i>community</i> ;
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Configure a single policy for import and a single policy for export to replace the per-VRF policies for every community.
Options	<i>community</i> —Community name. import—Specifies the allowed communities to accept from neighbors. export—Specifies the allowed communities to send to neighbors.
Usage Guidelines	See "Configure a VRF Target" on page 23.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-target